

# DEVELOPMENT AND DEPLOYMENT OF ADVANCED EMISSION CONTROLS FOR THE RETROFIT MARKET

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## ABSTRACT

Bringing a diesel retrofit product to market involves two primary phases: development and deployment. Critical product development steps include technology selection, system integration, laboratory and durability testing, and regulatory agency verification work. This initial product development phase is then followed by a deployment phase, which consists of building and managing the infrastructure for installation, distribution, service, sales and warranty support. Building relationships with regulators and air-quality program developers is also a critical aspect of the deployment process. A successful path to market requires close cooperation between developer, distributor, customer, and regulator.

Cleaire Advanced Emission Controls has developed an integrated NO<sub>x</sub> and particulate matter (PM) control system called "Longview," which can be applied to a wide variety of engines and applications. In April 2003, Longview became the first broadly applicable, combined NO<sub>x</sub> and PM emission control system to be verified by California Air Resources Board. Longview is verified to reduce NO<sub>x</sub> by 25 percent and PM by 85 percent. Key elements of Longview include a NO<sub>x</sub> reduction

catalyst, a catalyzed diesel particulate filter, a reagent injection system, and a combined controller/datalogger called the "MLC®." Key criteria for the end-user are affordability, minimal impact on vehicle operations, and ready access to qualified service and support facilities. Important features for regulators and grant programs are verifiable emission reductions and cost-effectiveness.

Cleaire is a division of Cummins West, Inc., the exclusive distributor of Cummins Incorporated products in central and northern California. While Cleaire has been focused on the development of the system, it has also worked with its parent to develop the criteria to become an "Authorized Cleaire Distributor." Excellent results in the test cell and proven durability in the field are thereby combined with an organization competent to handle sales, installation and service activities to support the product.

The paper will discuss the basic design features of the Longview system, present laboratory and field test results, and discuss the key process steps required for successful launch and support of retrofit emission control systems.